

WHAT IS CLAIMED IS:

1. A spout assembly for dispensing liquid from a nozzle, comprising:
  - a) a structural conduit including:
    - i) a first end portion for attaching relative to a nozzle body and a second end portion for dispensing liquid;
    - 5 ii) an interior passage providing an internal flow path from the first end portion to the second end portion; and
    - 10 iii) at least one internal sidewall, the internal sidewall including a first sidewall portion with a first cross-sectional dimension, a second sidewall portion with a second cross-sectional dimension that is smaller than the first cross-sectional dimension, and a transition location between the first and second sidewall portions, wherein the transition location provides for the change in cross-sectional dimensions between the first sidewall portion and the second sidewall portion, the first sidewall portion includes a length at least partially defining a substantially straight liquid flow path, wherein the substantially straight liquid flow path extends through the transition location without the transition location changing the substantially straight liquid flow path.
    - 15
2. The spout assembly of claim 1, wherein the first and second sidewall portions each have a substantially circular cross-sectional shape wherein the first and second cross-sectional dimensions comprise respective diameters of the first and second sidewall portions.
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3. The spout assembly of claim 1, wherein the transition location comprises a third sidewall portion of the internal sidewall that further defines the substantially straight liquid flow path.

4. The spout assembly of claim 3, wherein the first and third sidewall portions each have a substantially circular cross-sectional shape.

5. The spout assembly of claim 4, wherein the substantially circular cross-sectional shape of the first sidewall portion defines a diameter and wherein successive cross sections of the third sidewall portion along the substantially straight liquid flow path define a plurality of substantially circular cross-sectional shapes defining a plurality of successively smaller diameters.

6. The spout assembly of claim 5, wherein a lower portion of each of the cross-sectional shapes of the first and third sidewall portions at least partially define the substantially straight liquid flow path.

7. The spout assembly of claim 1, wherein the second sidewall portion of the interior sidewall includes a substantially straight portion and an angular portion, wherein the angular portion provides an angular orientation between the first sidewall portion and the substantially straight portion of the second sidewall portion.

8. The spout assembly of claim 1, further comprising a spout adapter mounted with respect to the first end portion of the structural conduit, the spout adapter including a pressure activated control valve adapted to permit flow of liquid into the spout assembly from a nozzle at a predetermined liquid pressure.

9. The spout assembly of claim 8, wherein the spout adapter further comprises a venturi channel and an attitude device in fluid communication with the

venturi channel, wherein the attitude device comprises a closing body adapted to close an opening of the venturi channel upon tilting of the spout assembly beyond a predetermined angle.

10. The spout assembly of claim 9, wherein the attitude device further  
5 comprises a bridge to trap the closing body in an interior area of the spout adapter.

11. The spout assembly of claim 10, wherein the bridge includes an aperture adapted to facilitate a pressure differential to bias the closing body against the bridge unless the spout assembly is tilted beyond a predetermined angle.

12. The spout assembly of claim 9, wherein the spout adapter further includes  
10 at least one adapter internal sidewall including a first adapter sidewall portion with a first adapter cross-sectional dimension adapted to receive a portion of the pressure activated control valve, a second adapter sidewall portion with a second adapter cross-sectional dimension that is smaller than the first adapter cross-sectional dimension, and an adapter location between the first and second adapter sidewall portions, wherein the adapter  
15 transition location provides for the change in cross-sectional dimensions between the first adapter sidewall portion and the second adapter sidewall portion, the first adapter sidewall portion includes a length at least partially defining a substantially straight adapter liquid flow path, wherein the substantially straight adapter liquid flow path extends through the adapter transition location without the adapter transition location  
20 changing the substantially straight liquid flow path.

13. The spout assembly of claim 8, wherein the spout adapter further includes at least one adapter internal sidewall including a first adapter sidewall portion with a first adapter cross-sectional dimension adapted to receive a portion of the pressure activated control valve, a second adapter sidewall portion with a second adapter cross-sectional

dimension that is smaller than the first adapter cross-sectional dimension, and an adapter transition location between the first and second adapter sidewall portions, wherein the adapter transition location provides for the change in cross-sectional dimensions between the first adapter sidewall portion and the second adapter sidewall portion, the first adapter  
5 sidewall portion includes a length at least partially defining a substantially straight adapter liquid flow path, wherein the substantially straight adapter liquid flow path extends through the adapter transition location without the adapter transition location changing the substantially straight liquid flow path.

14. The spout assembly of claim 13, further comprising a fluid tube disposed  
10 in the interior passage of the structural conduit and in fluid communication with the pressure activated control valve, wherein the second adapter cross-sectional dimension is adapted to receive a first end portion of the fluid tube, and wherein a second end portion of the fluid tube is adapted to dispense liquid adjacent the second end portion of the structural conduit.

15 15. A spout assembly for dispensing liquid from a nozzle, comprising:

- a) a structural conduit including:
  - i) a first end portion for attaching relative to a nozzle body and a second end portion for dispensing liquid;
  - ii) an interior passage providing an internal flow path from the  
20 first end portion to the second end portion; and
  - iii) at least one internal sidewall, the internal sidewall including a first sidewall portion with a first cross-sectional dimension, a second sidewall portion with a second cross-sectional dimension that is smaller than the first cross-

sectional dimension, and a transition location between the first and second sidewall portions, wherein the transition location provides for the change in cross-sectional dimensions between the first sidewall portion and the second sidewall portion, wherein the internal sidewall is adapted to substantially prevent pooling of liquid being dispensed  
5 from the nozzle.

16. The spout assembly of claim 15, wherein the first sidewall portion includes a length that at least partially defines a substantially straight liquid flow path, wherein the substantially straight liquid flow path extends through the transition location without the transition location changing the substantially straight liquid flow path.

10 17. The spout of claim 15, wherein the first sidewall portion includes a length that at least partially defines a first substantially straight liquid flow path, the second sidewall portion includes a length that at least partially defines a second substantially straight liquid flow path that is oriented at an obtuse interior angle with respect to the first substantially straight liquid flow path.

15 18. The spout of claim 17, wherein a curved portion of the interior sidewall provides the transition between the substantially straight liquid flow paths of the first and second sidewall portions.

19. The spout of claim 18, wherein a corresponding imaginary tangential line extends through each point along the curved portion, each imaginary tangential line  
20 extending at an interior angle with respect to the substantially straight liquid flow path of the first portion in the range from about 180° to about the obtuse internal angle.

20. The spout of claim 19, wherein the interior angle of each tangential line is successively smaller along the curved portion from the first sidewall portion to the second sidewall portion.

21. The spout assembly of claim 15, further comprising a spout adapter  
5 mounted with respect to the first end portion of the structural conduit, the spout adapter including a pressure activated control valve adapted to permit flow of liquid into the spout assembly from a nozzle at a predetermined liquid pressure.

22. The spout assembly of claim 21, wherein the spout adapter further  
comprises a venturi channel and an attitude device in fluid communication with the  
10 venturi channel, wherein the attitude device comprises a closing body adapted to close an opening of the venturi channel upon tilting of the spout assembly beyond a predetermined angle.

23. The spout assembly of claim 22, wherein the attitude device further  
comprises a bridge to trap the closing body in an interior area of the spout adapter.

15 24. The spout assembly of claim 23, wherein the bridge includes an aperture adapted to facilitate a pressure differential to bias the closing body against the bridge unless the spout assembly is tilted beyond a predetermined angle.

25. The spout assembly of claim 22, wherein the spout adapter further  
includes at least one adapter internal sidewall including a first adapter sidewall portion  
20 with a first adapter cross-sectional dimension adapted to receive a portion of the pressure activated control valve, a second adapter sidewall portion with a second adapter cross-sectional dimension that is smaller than the first adapter cross-sectional dimension, and an adapter transition location between the first and second adapter sidewall portions,

wherein the adapter transition location provides for the change in cross-sectional dimensions between the first adapter sidewall portion and the second adapter sidewall portion, the first adapter sidewall portion includes a length at least partially defining a substantially straight adapter liquid flow path, wherein the substantially straight adapter liquid flow path extends through the adapter transition location without the adapter transition location changing the substantially straight liquid flow path.

26. The spout assembly of claim 21, wherein the spout adapter further includes at least one internal adapter sidewall including a first adapter sidewall portion with a first adapter cross-sectional dimension adapted to receive a portion of the pressure activated control valve, a second adapter sidewall portion with a second adapter cross-sectional dimension that is smaller than the first adapter cross-sectional dimension, and an adapter transition location between the first and second adapter sidewall portions, wherein the adapter transition location provides for the change in cross-sectional dimensions between the first adapter sidewall portion and the second adapter sidewall portion, the first adapter sidewall portion includes a length at least partially defining a substantially straight adapter liquid flow path, wherein the substantially straight adapter liquid flow path extends through the adapter transition location without the adapter transition location changing the substantially straight liquid flow path.

27. The spout assembly of claim 26, further comprising a fluid tube disposed in the interior passage of the structural conduit and in fluid communication with the pressure activated control valve, wherein the second adapter cross-sectional dimension is adapted to receive a first end portion of the fluid tube, and wherein a second end portion of the fluid tube is adapted to dispense liquid adjacent the second end portion of the structural conduit.

28. A spout assembly for dispensing liquid from a nozzle and movable between a storage orientation and a dispensing orientation, comprising:

a) a structural conduit including:

i) a first end portion for attaching relative to a nozzle body  
5 and a second end portion for dispensing liquid;

ii) an interior passage providing an internal liquid flow path in a general direction from the first end portion to the second end portion; and

iii) at least one internal sidewall defining the internal flow path running from the first end portion to the second end portion, each of the first end and the  
10 second end portion having generally cylindrical configurations with a diameter of the internal flow path in the second end being reduced relative to the diameter of the internal flow path in the first end; and

b) a transition portion positioned intermediate the first end and the second end for reducing the cross-sectional area of the internal flow path therebetween,  
15 the internal liquid flow path in the transition portion being asymmetrically tapered to alter the cross-sectional area of the internal liquid flow path from a first inside diameter of the liquid flow path adjacent an inlet end of the transition portion to a second inside diameter of the liquid flow path adjacent an outlet end of the transition portion, a lower inside surface of the liquid flow path in the transition portion being flattened relative to an  
20 opposed upper inside surface of the transition portion so that, when the spout is in a dispensing orientation, the lowest point in any cross-sectional portion of the flow path through the transition portion is not at a substantially higher elevation than a line



connecting the lowest points of the flow path at the respective upstream portions of the first end and the transition portion.

29. The spout assembly of claim 28, wherein the spout assembly further comprises a pressure activated liquid control valve that is positioned upstream of the transition portion.

30. The spout assembly of claim 28, wherein the spout assembly further comprises an open-ended cavity formed proximate to the second end portion of the structural conduit, the cavity being at least partially circumferentially disposed about the internal flow path and operative to capture liquid flowing down the internal sidewall toward the second end portion of the structural conduit.

31. The spout assembly of claim 30, the open-ended cavity opens in a direction generally opposite to the direction of the internal liquid flow path.

32. The spout assembly of claim 30, wherein the cavity is opened in a radially inward direction.

33. The spout assembly of claim 30, further comprising a ferrule disposed at least partially in the second end portion of the structural conduit, wherein the ferrule at least partially defines the open-ended cavity.

34. A spout assembly for dispensing liquid from a nozzle, comprising:

a) a structural conduit including a first end portion for attaching relative to a nozzle body, a second end portion for dispensing liquid, and an interior passage adapted to provide an internal flow path from the first end portion to the second end portion; and

b) a spout adapter mounted with respect to the first end portion, the spout adapter including a pressure activated control valve adapted to permit flow of liquid into the spout assembly from a nozzle at a predetermined liquid pressure, the spout adapter further comprising a venturi channel and an attitude device in fluid communication with the venturi channel, wherein the attitude device comprises a closing body adapted to close an opening of the venturi channel upon tilting of the spout assembly beyond a predetermined angle.

35. The spout assembly of claim 34, wherein the attitude device further comprises a bridge to trap the closing body in an interior area of the spout adapter.

10 36. The spout assembly of claim 35, wherein the bridge includes an aperture adapted to facilitate a pressure differential to bias the closing body against the bridge unless the spout assembly is tilted beyond a predetermined angle.

37. The spout assembly of claim 35, wherein the bridge includes an overhang portion adapted to restrain a movement of the closing body.

15 38. The spout assembly of claim 35, wherein the bridge is included as part of an attitude plug.

39. The spout assembly of claim 34, wherein the spout adapter further includes at least one internal sidewall including a first sidewall portion with a first cross-sectional dimension adapted to receive a portion of the pressure activated control valve, a second sidewall portion with a second cross-sectional dimension that is smaller than the first cross-sectional dimension, and a transition location between the first and second sidewall portions, wherein the transition location provides for the change in cross-sectional dimensions between the first sidewall portion and the second sidewall portion,

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the first sidewall portion includes a length at least partially defining a substantially straight liquid flow path, wherein the substantially straight liquid flow path extends through the transition location without the transition location changing the substantially straight liquid flow path.

5           40.     The spout assembly of claim 39, further comprising a fluid tube disposed in the interior passage of the structural conduit and in fluid communication with the pressure activated control valve, wherein the second cross-sectional dimension of the adapter is adapted to receive a first end portion of the fluid tube, and wherein a second end portion of the fluid tube is adapted to dispense liquid adjacent the second end portion  
10   of the structural conduit.

41.     A spout assembly for dispensing liquid from a nozzle, comprising:

a)     a structural conduit including a first end portion for attaching relative to a nozzle body, a second end portion for dispensing liquid, a sensing opening located at the second end, and an interior passage adapted to provide an internal flow path  
15   from the first end portion to the second end portion;

b)     a spout adapter mounted with respect to the first end portion, the spout adapter including a pressure activated control valve adapted to permit flow of liquid into the spout assembly from a nozzle at a predetermined liquid pressure, and a venturi channel;

20           c)     a flexible conduit providing fluid communication between the sensing opening and the venturi channel; and

d)     a fluid tube disposed in the interior passage of the structural conduit and in fluid communication with the pressure activated control valve and adapted

to dispense liquid adjacent the second end portion of the structural conduit, an external surface of the fluid tube defining a groove receiving at least a portion of a length of the flexible conduit.

42. The spout assembly of claim 41, wherein the groove is substantially  
5 helically disposed about the fluid tube.

43. The spout assembly of claim 41, further comprising a ferrule disposed adjacent the second end portion of the structural conduit and adapted to receive an end of the fluid tube.

44. The spout assembly of claim 41, wherein the spout adapter further  
10 includes at least one internal adapter sidewall including a first adapter sidewall portion with a first cross-sectional dimension adapted to receive a portion of the pressure activated control valve, a second adapter sidewall portion with a second cross-sectional dimension that is smaller than the first cross-sectional dimension and adapted to receive a first end portion of the fluid tube, and a transition location between the first and second  
15 adapter sidewall portions, wherein the transition location provides for the change in cross-sectional dimensions between the first adapter sidewall portion and the second adapter sidewall portion, the first adapter sidewall portion includes a length at least partially defining a substantially straight liquid flow path, wherein the substantially straight liquid flow path extends through the transition location without the transition  
20 location changing the substantially straight liquid flow path.

45. The spout assembly of claim 41, wherein the structural conduit further includes at least one internal sidewall, the internal sidewall includes a first sidewall portion with a first cross-sectional dimension, a second sidewall portion with a second cross-sectional dimension that is smaller than the first cross-sectional dimension, and a

transition location between the first and second sidewall portions, wherein the transition location provides for the change in cross-sectional dimensions between the first sidewall portion and the second sidewall portion, the first sidewall portion including a length at least partially defining a substantially straight liquid flow path, wherein the substantially straight liquid flow path extends through the transition location without the transition location changing the substantially straight liquid flow path.

46. The spout assembly of claim 45, wherein the first and second sidewall portions each have a substantially circular cross-sectional shape wherein the first and second cross-sectional dimensions comprise respective diameters of the first and second sidewall portions.

47. The spout assembly of claim 45, wherein the transition location comprises a third sidewall portion of the internal sidewall that further defines the substantially straight liquid flow path.

48. The spout assembly of claim 47, wherein the first and third sidewall portions each have a substantially circular cross-sectional shape.

49. The spout assembly of claim 48, wherein the substantially circular cross-sectional shape of the first sidewall portion defines a diameter and wherein successive cross sections of the third sidewall portion along the substantially straight liquid flow path define a plurality of substantially circular cross-sectional shapes defining a plurality of successively smaller diameters.

50. The spout assembly of claim 49, wherein a lower portion of each of the cross-sectional shapes of the first and third sidewall portions at least partially define the substantially straight liquid flow path.

51. The spout assembly of claim 45, wherein the second sidewall portion of the interior sidewall includes a substantially straight portion and an angular portion, wherein the angular portion provides an angular orientation between the first sidewall portion and the substantially straight portion of the second sidewall portion.

5 52. The spout assembly of claim 41, wherein the structural conduit further includes at least one internal sidewall, the internal sidewall including a first sidewall portion with a first cross-sectional dimension, a second sidewall portion with a second cross-sectional dimension that is smaller than the first cross-sectional dimension, and a transition location between the first and second sidewall portions, wherein the transition  
10 location provides for the change in cross-sectional dimensions between the first sidewall portion and the second portion sidewall , wherein the internal sidewall is adapted to substantially prevent pooling of liquid being dispensed from the nozzle.

53. The spout assembly of claim 52, wherein the first sidewall portion includes a length that at least partially defines a substantially straight liquid flow path,  
15 wherein the substantially straight liquid flow path extends through the transition location without the transition location changing the substantially straight liquid flow path.

54. The spout of claim 52, wherein the first sidewall portion includes a length that at least partially defines a first substantially straight liquid flow path, the second sidewall portion includes a length that at least partially defines a second substantially  
20 straight liquid flow path that is oriented at an obtuse interior angle with respect to the first substantially straight liquid flow path.

55. The spout of claim 54, wherein a curved portion of the interior sidewall provides the transition between the substantially straight liquid flow paths of the first and second sidewall portions.

56. The spout of claim 55, wherein imaginary tangential lines extend through each point along the curved portion, each imaginary tangential line extending at an interior angle with respect to the first substantially straight liquid flow path in the range from about 180° to about the obtuse internal angle.

5 57. The spout of claim 56, wherein the interior angle of each tangential line is successively smaller along a liquid flow path from the first sidewall portion to the second sidewall portion.

58. A spout assembly for dispensing liquid from a nozzle, comprising:

a) a structural conduit including a first end portion for attaching  
10 relative to a nozzle body, a second end portion for dispensing liquid, and an interior passage adapted to provide an internal flow path from the first end portion to the second end portion;

b) a spout adapter mounted with respect to the first end portion of the structural conduit, the spout adapter including a pressure activated control valve adapted  
15 to permit flow of liquid into the spout assembly from a nozzle at a predetermined liquid pressure, the spout adapter further including at least one internal adapter sidewall including a first adapter sidewall portion with a first cross-sectional dimension adapted to receive a portion of the pressure activated control valve, a second adapter sidewall portion with a second cross-sectional dimension that is smaller than the first cross-  
20 sectional dimension, and a transition location between the first and second adapter sidewall portions, wherein the transition location provides for the change in cross-sectional dimensions between the first adapter sidewall portion and the second adapter sidewall portion, the first adapter sidewall portion includes a length at least partially defining a substantially straight liquid flow path, wherein the substantially straight liquid

flow path extends through the transition location without the transition location changing the substantially straight liquid flow path; and

c) a fluid tube disposed in the interior passage of the structural conduit and in fluid communication with the pressure activated control valve, wherein the second cross-sectional dimension of the adapter is adapted to receive a first end portion of the fluid tube, and wherein a second end portion of the fluid tube is adapted to dispense liquid adjacent the second end portion of the structural conduit.

59. A nozzle for dispensing liquid into a container, comprising:

a) a nozzle body including an inlet for receiving liquid, an outlet for dispensing liquid, and a liquid passage extending between the inlet and the outlet;

b) a valve assembly adapted to selectively control the flow of liquid through the liquid passage;

c) a spout assembly for receiving and directing liquid from the outlet, the spout assembly including a first end portion attached relative to the nozzle body and a second end portion for dispensing liquid, the spout assembly further including at least one internal sidewall at least partially defining a liquid passage providing an internal liquid flow path in a general direction extending from the first end portion of the spout assembly to the second end portion of the spout assembly; and

d) an open-ended cavity formed proximate to the second end portion of the spout assembly, the cavity being at least partially circumferentially disposed about the liquid passage and being operative to capture liquid flowing down the internal sidewall in the direction of the internal liquid flow path toward the second end portion of the spout assembly.



60. The nozzle of claim 59, wherein the open-ended cavity is at least partially formed by the internal sidewall of the spout assembly.

61. The nozzle of claim 59, further comprising a ferrule attached with respect to the second end portion of the spout assembly, wherein the open-ended cavity is at least partially formed by the ferrule.

62. The nozzle of claim 61, wherein open-ended cavity is further at least partially formed by the internal sidewall of the spout assembly.

63. The nozzle of claim 59, wherein the open-ended cavity opens in a direction generally opposite to the direction of the internal liquid flow path.

64. A spout assembly for dispensing liquid from a nozzle, comprising:

a) a structural conduit including:

i) a first end portion for attaching relative to a nozzle body and a second end portion for dispensing liquid;

ii) an interior passage providing an internal liquid flow path in a general direction from the first end portion to the second end portion; and

iii) at least one internal sidewall at least partially defining the internal liquid flow path running from the first end portion to the second end portion, each of the first end portion and the second end portion having generally cylindrical configurations with a diameter of the internal flow path in the second end portion being reduced relative to the diameter of the internal flow path in the first end portion; and

b) an open-ended cavity formed proximate to the second end portion of the structural conduit, the cavity being at least partially circumferentially disposed about the internal flow path and being operative to capture liquid flowing down at least one sidewall toward the second end of the structural conduit.

5            65. The nozzle of claim 64, wherein the open-ended cavity is at least partially formed by the internal sidewall of the structural conduit.

66. The nozzle of claim 64, further comprising a ferrule attached with respect to the second end portion of the structural conduit, wherein the open-ended cavity is at least partially formed by the ferrule.

10           67. The nozzle of claim 66, wherein open-ended cavity is further at least partially formed by the internal sidewall of the structural conduit.

68. The nozzle of claim 64, wherein the open-ended cavity opens in a direction generally opposite to the direction of the internal liquid flow path.

69. A nozzle for dispensing liquid, comprising:

15           a) a nozzle body including an inlet for receiving liquid, an outlet for dispensing liquid, and a liquid passage extending between the inlet and the outlet;

b) a valve assembly adapted to selectively control the flow of liquid through the liquid passage;

c) a shut-off mechanism for stopping the flow of liquid through the  
20 liquid passage in response to selected predetermined conditions;

d) a spout assembly for receiving and directing the liquid from the nozzle body outlet, the spout assembly including a first end portion attached relative to the nozzle body and a second end portion for dispensing liquid, the spout assembly having an internal sidewall at least partially defining a liquid passage extending from the first end portion of the spout assembly to the second end portion of the spout assembly; and

e) a dual path liquid control valve at least partially disposed in the liquid passage proximate the first end portion of the spout assembly, the dual path liquid control valve including:

i) a primary liquid path and an auxiliary liquid path, the auxiliary liquid path having a cross-sectional flow area that is smaller than the cross-sectional flow area of the primary liquid path;

ii) a first pressure activated valve disposed in the primary liquid path, the first pressure activated valve including a first biasing member adapted to urge the primary liquid valve to a closed position; and

iii) a second pressure activated valve disposed in the auxiliary liquid path, the second pressure activated valve including a second biasing member adapted to urge the second pressure activated valve to a closed position, each of the first and second pressure activated valves being openable in response to liquid pressure of liquid flowing from the outlet of the nozzle body, the second pressure activated being openable in response to a lower liquid pressure than the first pressure activated valve; and

iv) a venturi located downstream of the second pressure activated valve in the auxiliary liquid path, the venturi being in fluid communication with

both a liquid sensing location and the shut-off mechanism, and being operative to activate the shut-off mechanism in response to one of multiple predetermined conditions.

70. The nozzle of claim 69, further including an exhaust conduit for discharging liquid from the auxiliary liquid path at a location downstream of a venturi opening exposed to the auxiliary liquid path.

71. A spout assembly for dispensing liquid from a nozzle, comprising:

- a) a structural conduit formed of a metallic material;
- b) a plurality of control components at least partially disposed in the structural conduit, the control components being operative to control the flow of liquid through the nozzle, at least one of the control components being formed of an acetal resin material; and
- c) an adhesive, the adhesive being operative to secure at least one control component formed of an acetal resin material to at least one of the remaining control components.

72. The spout assembly of claim 71, wherein the adhesive secures at least one control component formed of an acetal resin to another control component formed of an acetal resin.

73. The spout assembly of claim 71, wherein multiple of the components are formed of an acetal resin and are secured to each other solely by the adhesive.

74. A vacuum control mechanism for use in a liquid dispensing nozzle, comprising:

a) a fluid conduit adapted for disposition in a spout of a liquid dispensing nozzle, the fluid conduit having a liquid-sensing segment and a nozzle shut-off control segment, the liquid-sensing segment being adapted for disposition at a liquid level sensing location and shut-off control segment being adapted to communicate with a  
5 nozzle shut-off mechanism; and

b) a check valve disposed in the fluid conduit, the check valve being operative to allow the flow of liquid through the fluid conduit in a direction from the liquid-sensing segment toward the nozzle shut-off control segment and to substantially prevent the flow of liquid in the direction from the nozzle shut-off control segment to the  
10 liquid-sensing segment.

75. The vacuum control mechanism of claim 74, wherein the check valve is formed of a material comprising acetal resin.

76. The vacuum control mechanism of claim 74, wherein the fluid conduit is formed of a material comprising acetal resin.

15 77. A vacuum control mechanism for use in a liquid dispensing nozzle, comprising: a fluid conduit defining a liquid flow path, the fluid conduit adapted for disposition in a spout of a liquid dispensing nozzle, the fluid conduit having a liquid-sensing segment and a nozzle shut-off control segment, the liquid-sensing segment being adapted for disposition at a liquid level sensing location and the shut-off control segment  
20 being adapted to communicate with a nozzle shut-off mechanism, the nozzle shut-off mechanism being responsive to the introduction of liquid into the fluid conduit and liquid sensing segment including at least two openings, whereby one of the two openings serves as a vent for draining the liquid introduced into the fluid conduit.

78. The vacuum control mechanism of claim 77, further comprising a check valve disposed in the fluid conduit, the check valve being operative to allow the flow of liquid through the fluid conduit in a direction from the liquid-sensing segment toward the nozzle shut-off control segment and to substantially prevent the flow of fluid in the  
5 direction from the nozzle shut-off control segment to the liquid-sensing segment.

79. The vacuum control mechanism of claim 78, wherein the check valve and the fluid conduit are formed of a material comprising acetal resin.